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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,107	11/20/2003	Pao-Ching Tseng	MTKP0051USA	1106

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
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EXAMINER	
NGUYEN, THAN VINH	
ART UNIT	**PAPER NUMBER**
2187	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/707,107	TSENG ET AL.	
	Examiner	Art Unit	
	Than Nguyen	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/3/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 are pending.

2. The IDS, filed 11/3/05, has been considered.

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Microcontroller With Dedicated Memory Bank For Servicing Interrupts.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhou et al (US 5,913,924).

As to claim 1:

7. Zhou teaches the claimed microcontroller with expandable memory banks, the microcontroller comprising: a microprocessor (processor 310); a plurality of memory banks connected to the microprocessor for storing data, programs (memory banks; 370A & 370B); a memory bank control circuit connected to the microprocessor for asserting a signal during the

processing of an interrupt event (interrupt service routine asserts space select signal; 6/49-64); and a multiplexer for connecting the microprocessor with the plurality of memory banks, the multiplexer comprising: a first input connected to an output of the microprocessor for bank switching during the normal operation; a second input connected to a predetermined value corresponding to the memory bank storing the interrupt service routines (normal operation; 5/23-6/48; interrupt – switch to code bank with ISR code; 6/49-7/10); and a selecting port connected to an output of the memory bank control circuit for selecting whether to output an page selection signal from the output of the microprocessor or an predetermined page selection signal, wherein the microprocessor can access data stored in the memory bank storing the interrupt service routines when the interrupt occurs (assert space selection signal upon interrupt to perform ISR; 6/49-7/10).

As to clam 2,9:

8. Zhou teaches wherein the microprocessor is an MCS series microprocessor (1/13-20; 4/39).

As to claim 3:

9. Zhou teaches the plurality of memory banks are expandable and have a storage space larger than a command addressing capacity of the microcontroller (1/21-35; 3/44-65).

As to claim 4:

10. Zhou teaches the multiplexer further comprises extra input for a different predetermined page selection signal corresponding to the memory bank storing different interrupt service routines (space select signal; 2/52-60; 5/15-31).

As to claim 5:

11. Zhou teaches the memory bank control circuit generates a selection signal according to one of different interrupt sources (interrupt by a device generates space select instruction; 6/50-64).

As to claim 6,10:

12. Zhou teaches each memory bank comprises a common area that does not comprise the interrupt service routines (4/66-5/8; 7/60-64).

As to claim 7,11:

13. Zhou teaches any program called by the interrupt service routine and the interrupt service routine is stored in the same memory bank (during ISR, cannot switch bank, program switching servicing ISR is in same bank; 6/57-7/10).

As to claim 8:

14. Zhou teaches a method for accessing a memory connected to a microprocessor, wherein the memory comprises a plurality of memory banks (memory banks; 370A & 370B), the method comprising: (a) storing interrupt service routines in one of the plurality of memory banks (6/49-7/10; 7/60-64); (b) when an interrupt of the microprocessor does not occur, selecting and accessing a memory bank according to a page selection signal output by the microprocessor

(normal addressing; 5/23-48); and (c) when an interrupt of the microprocessor occurs, selecting and accessing the memory bank storing the interrupt service routines according to a predetermined page selection signal (servicing interrupt by switching to bank with ISR: 6/49-7/10) .

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Than Nguyen can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Than Nguyen
Primary Examiner
Art Unit 2187